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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/681,529	10/08/2003	Robert E. Stewart	NGC-138/000209-199	7493

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CARMEN B. PATTI & ASSOCIATES, LLC
ONE NORTH LASALLE STREET
44TH FLOOR
CHICAGO, IL 60602

EXAMINER	
HOEKSTRA, JEFFREY GERBEN	
ART UNIT	**PAPER NUMBER**
3736	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/10/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	**Application No.** 10/681,529	**Applicant(s)** STEWART, ROBERT E.	
	Examiner Jeffrey G. Hoekstra	**Art Unit** 3736	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 January 2007*.
2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.
4a) Of the above claim(s) *17-22* is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) *1-16* is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on *16 January 2007* is/are: a)☒ accepted or b)☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a)☐ All b)☐ Some * c)☐ None of:
1.☐ Certified copies of the priority documents have been received.
2.☐ Certified copies of the priority documents have been received in Application No. _____.
3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. In response to Applicant's Remarks filed 01/16/2007 affirming the election of Group I, drawn to claims 1-17, Species A in Species Set 1, drawn to Figure 1, and Species C in Species Set 2, drawn to Figure 2 with traverse, the Examiner notes the election was made to prosecute the invention **without** traverse in the reply filed on 10/27/2006 and during a telephone conversation with James Milton on 12/12/06.

2. However, Applicant argues the Species Set I are drawn to subject matter that is so related to each other that an undue burden is not present. The Examiner disagrees, maintains the election requirement, notes the election without traverse, and notes the Species embodied in Figures 1 and 4 and substantially dissimilar and structurally divergent means for configuring wearable bodily sensors.

Drawings

3. The drawings were received on 01/16/2007. These drawings are acceptable in lieu of the correction of minor errors.

Claim Rejections - 35 USC § 102

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1-12 and 14-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Kramer (US 5,592,401).

6. For claims 1 and 2, Kramer discloses an apparatus as broadly as structurally claimed, comprising: one or more strain sensors that produce one or more signals based on one or more joint motions of an individual (column 6 line 17 – column 7 line 22, column 12 lines 8-17, and column 15 lines 16-19); one or more processing components that employ one or more of the one or more signals to make a determination of a positional change of the individual (column 11 lines 12-25); and wherein the one or more joint motions are measured and reconstructed to determine a path traversed by the individual (as best seen in Figure 1 and column 17 lines 6-11) said path capable of being used to create a map or an area (as best seen in Figure 1 and column 17 lines 6-11).

7. For claims 3-6, Kramer discloses an apparatus as broadly as structurally claimed, wherein a first strain sensor of the one or more strain sensors detects a bending of a first joint of the individual, wherein the first strain sensor represents the bending as first strain information in a first signal of the one or more signals (column 6 line 17 – column 7 line 22, column 12 lines 8-17, and column 12 lines 16-19); wherein one or more of the one or more processing components employ the first strain information to make a determination of a displacement of the positional change of the individual (column 11 lines 12-25 and column 17 lines 6-11); wherein a second strain sensor of the one or more strain sensors detects a twisting of a second joint of the individual, wherein the second strain sensor represents the twisting as second strain information in a second signal of the one or more signals (column 6 line 17 – column 7 line 22, column 12 lines 8-17, and column 12 lines 16-19); wherein one or more of the

one or more processing components employ the second strain information to make a determination of a direction of the positional change of the individual (column 11 lines 12-25 and column 17 lines 6-11); wherein one or more of the one or more processing components employ the displacement of the positional change, the direction of the positional change, and a known starting location of the individual to make a determination of an updated position of the individual (column 11 lines 12-25 and column 17 lines 6-11).

8. For claims 7 and 8, Kramer discloses an apparatus as broadly as structurally claimed, further comprising: a filter (said program positively recited in column 10 lines 29-46) said component that weighs and combines: the positional change determined by the one or more processing components based on the one or more joint motions of the individual; and position information from one or more supplementary navigation components, wherein the supplementary navigation components comprise one or more of a global positioning system, GPS, and an inertial navigation system, INS (column 7 lines 36-46); wherein the filter component weighs and combines position information from the one or more processing components and the supplementary navigation components based on a relative reliability of the one or more processing components and the supplementary navigation components (column 9 lines 22-41).

9. For claims 9 and 10, Kramer discloses an apparatus as broadly as structurally claimed, wherein one or more of the one or more processing components receive position correction information of the individual from one or more supplementary navigation components (column 10 lines 29-46 and column 17 lines 6-11) and wherein

one or more of the one or more processing components provide initial position information of the individual to one or more supplementary navigation components upon initialization of the one or more supplementary navigation components (column 7 lines 36-46, column 10 lines 29-46, and column 17 lines 6-11).

10. For claim 11, Kramer discloses an apparatus as broadly as structurally claimed, wherein the one or more sensors are integrated into a suit wearable by the individual, wherein the one or more sensors are located in the suit at positions that are adjacent to one or more joints of the individual (as best seen in Figure 2).

11. For claim 12, Kramer discloses an apparatus as broadly as structurally claimed, further comprising: a magnetic heading sensor (said electromagnetic sensor positively recited in column 7 lines 36-46) that provides direction information to one or more of the one or more processing components (column 10 lines 29-46), wherein the direction information of the magnetic heading sensor supplements the positional change determined by the one or more processing components; wherein the magnetic heading sensor is capable of employing the Earth's magnetic field to make a determination of a direction of the positional change of the individual.

12. For claim 14, Kramer discloses an apparatus as broadly as structurally claimed, wherein the one or more sensors and the one or more processing components are calibrated (column 6 lines 40-65) to the individual by having the individual traverse a known path to monitor how the one or more joint motions of the individual respond to the known path.

13. For claim 15, Kramer discloses an apparatus as broadly as structurally claimed, wherein the one or more processing components calculate an updated position of the individual based on a known starting position and the positional change of the individual (column 10 lines 29-46); wherein the one or more processing components send the updated position of the individual to one or more of a display component and a recording component (column 10 lines 29-46).

14. For claim 16, Kramer discloses an apparatus as broadly as structurally claimed, wherein the one or more sensors comprise one or more rate sensors (column 6 lines 18-39).

Claim Rejections - 35 USC § 103

15. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

16. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kramer in view of Root et al (US 6,013,007). Kramer discloses the claimed invention except for the barometric altitude sensor providing information to the one or more processing components via measuring atmospheric pressure. Root et al teaches position-sensing device, comprising: a barometric altitude sensor (610) providing information to the one or more processing components (602) via measuring atmospheric pressure. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the position-sensing apparatus as taught by Kramer, with the pressure

sensor of Root et al for the purpose of increasing the efficacy of a position sensing apparatus for improvements in patient tracking.

Response to Arguments

17. Applicant's arguments filed 01/16/2007 have been fully considered but they are not persuasive. Applicant argues Kramer does not anticipate claims 1-12 and 14-16 or render obvious claim 13, because Kramer does not teach the use of a path to create a map of an area. The Examiner disagrees, maintains the rejection as broadly as *structurally* claimed, and notes the following:

18. In response to applicant's argument that Kramer does not teach "wherein the one or more joint motions are measured and reconstructed to determine a path traversed by the individual; and wherein the path is used to create a map of an area", a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

19. In this case, Kramer teaches an apparatus for motion measurement, data analysis, and subsequent informative analysis. The Kramer device determines bodily positions over time via accelerometers, gyroscopes, GPS sensors, and DGPS sensors and records the paths traversed by the body via a computer operating motion analysis software (column 6 line 25 – column 12 line 17). The Kramer device is capable of using the determined path to perform the function of creating a map of an area, specifically

Kramer teaches the positional and/or motion data may be processed from the array of sensors mounted to a measure body part for calculating and/or logging the spatial placement or other desirable motion parameters (column 17 lines 6-11). Moreover, the Examiner notes logging the spatial displacement of motion data creates a map of the area traversed by the measured body part.

Conclusion

20. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey G. Hoekstra whose telephone number is (571) 272-7232. The examiner can normally be reached on Monday through Friday, 8:00 a.m. to 5:00 p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Max F. Hindenburg can be reached on (571) 272-4726. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

M F Hindenburg
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JH JH